BRUHAT BANGALORE MAHANAGARA PALIKE

NAME OF WORK: IMPROVEMENTS TO ROADS AND DRAINS AT L&T COLONY NEAR AMRUTHA CLINIC IN WARD NO 07 - BYATARAYANAPURA, KODIGEHALLI SUB DIVISION.

CONSULTANT:

BVH CONSULTING ENGINEERS

 # 41/2, 6TH MAIN ROAD JNANAJYOTHI NAGAR,
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Bruhat Bangalore Mahanagara Palike

BYTARAYANAPURA DIVISION

Job No: 007-16-000043 26618

Name of Agency :- Benaka Developers and projects Pvt. Ltd

Bill No :- 1st Part Bill

Name of work: Improvements to Roads and drains at L&T Colony Near Amrutha Clinic in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)							
	Measurements recorded on:							
	Desilt	Cum						
	L&T Colony							
	1st Cross Road							
	0-32	2	32.00	0.45	0.40	11.52		
	2nd Cross Road							
	0-31	2	31.00	0.45	0.40	11.16		
	3rd Cross Road							
	0-30.20	2	30.00	0.45	0.40	10.80		
	4th Cross Road			0.45				
	0-32.30	2	32.00	0.45	0.40	11.52		
	5th Cross Road							
	0-32	2	32.00	0.45	0.40	11.52		
	6th Cross Road							
	0-31	1	31.00	0.45	0.40	5.58		
	L&T Colony Main Road							
	0-30	2	30.00	0.45	0.60	16.20		
	30-50	2	20.00	0.45	0.60	10.80		
	old Culvert at 1st cross 50-57	1	7.00	0.45	0.60	1.89		
	57-90	2	33.00	0.45	0.60	17.82		
	old Culvert at 2nd cross 90-96	1	6.00	0.45	0.60	1.62		
	96-124	2	28.00	0.45	0.60	15.12		
	old Culvert at 3rd cross124 -131	1	7.00	0.45	0.60	1.89		
	131-159	2	28.00	0.45	0.60	15.12		
	old Culvert at 4th cross159 -166	1	7.00	0.45	0.60	1.89		
	166-195	2	29.00	0.45	0.60	15.66		
	old Culvert at 5th cross195 - 201	1	6.00	0.45	0.60	1.62		
	201-231	2	30.00	0.45	0.60	16.20		
	6th cross road 231 - 236	1	6.00	0.45	0.60	1.62		
	240-251	1	11.00	0.45	0.60	2.97		
	Varadaraju Layout 8th cross Road RHS	2	30.00	0.45	0.40	10.80		
		2	30.00	0.45	0.40	10.80		
		2	7.00	0.45	0.40	2.52		

B.V.H. Consulting Engineers Bangalore

Abstd. N.D AE(Hq) 01/01/18

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Assistant Executive Engineer
Kodigehalli Sub Division

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	Over Burden Earth At cross roads and main road							
	2nd cross	1	27.00	2.60	0.50	35.10		
	at main road	1	28.00	5.10	0.45	64.26		
	3rd cross road	1	25.00	2.00	0.60	30.00		
	4th cross road	1	24.00	3.80	0.55	50.16		
	5th cross	1	26.00	2.30	0.55	32.89		
	6th cross road	1	29.00	2.70	0.60	46.98		
				Total Qty Cum		466.03	196.00	91341.88
2	Removing & Refixing Stone slabs of drains and Pointing in C.M(1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)							
	Measurements recorded on:							
	BS Slab Drain	sqm						
	Damaged Drain L&T Colony							
	1st Cross Road RHS							
	0-32 Bottom	1	32.00	0.40		12.80		
	0-32 sides	2	32.00	0.45		28.80		
	2nd Cross Road							
	0-31 bottom	1	31.00	0.40		12.40		
	0-31 sides	2	31.00	0.45		27.90		
	3rd Cross Road							
	0-30 Bottom	1	30.00	0.40		12.00		
	0-30 sides	2	30.00	0.45		27.00		
	4th Cross Road							
	0-32 Bottom	1	32.00	0.40		12.80		
	0-32 sides	2	32.00	0.45		28.80		
	5th Cross Road							
	0-32 Bottom	1	32.00	0.40		12.80		
	0-32 sides	2	32.00	0.45		28.80		
	6th Cross Road							
	0-31 Bottom	1	12.00	0.40		4.80		
	0-31 sides	2	12.00	0.45		10.80		
	LHS							
	1st Cross Road							
	0-32 Bottom	1	32.00	0.40		12.80		
	0-32 sides	2	32.00	0.45		28.80		
	2nd Cross Road							
	0-31 bottom	1	31.00	0.40		12.40		
	0-31 sides	2	31.00	0.45		27.90		
	3rd Cross Road							
	0-30 Bottom	1	30.00	0.40		12.00		
	0-30 sides	2	30.00	0.45		27.00		
	4th Cross Road							
	0-32 Bottom	1	32.00	0.40		12.80		
	0-32 sides	2	32.00	0.45		28.80		
	L&T Colony Main Road RHS							
	Ch: 0.00 - 30.00 Bottom	1	30.00	0.40		12.00		
	sides	2	30.00	0.50		30.00		

Assistant Executive Engineer
Kodigehalli Sub Division

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	Ch: 30.00 - 50.00 Bottom	1	20.00	0.40		8.00		
	sides	2	20.00	0.50		20.00		
	Ch: 57.00 - 90.00 Bottom	1	33.00	0.40		13.20		
	sides	2	33.00	0.50		33.00		
	Ch: 96.00 - 124.00 Bottom	1	28.00	0.40		11.20		
	sides	2	28.00	0.50		28.00		
	Ch: 131.00 - 159.00 Bottom	1	28.00	0.40		11.20		
	sides	2	28.00	0.50		28.00		
	Ch: 166.00 - 195.00 Bottom	1	29.00	0.40		11.60		
	sides	2	29.00	0.50		29.00		
	Ch: 201.00 - 231.00 Bottom	1	30.00	0.40		12.00		
	sides	2	30.00	0.50		30.00		
	Ch: 240.00 - 251.00 Bottom	1	11.00	0.40		4.40		
	sides	2	11.00	0.50		11.00		
	LHS							
	Ch: 0.00 - 30.00 Bottom	1	30.00	0.40		12.00		
	sides	2	30.00	0.50		30.00		
	Ch: 30.00 - 50.00 Bottom	1	20.00	0.40		8.00		
	sides	2	20.00	0.50		20.00		
	Ch: 57.00 - 90.00 Bottom	1	33.00	0.40		13.20		
	sides	2	33.00	0.50		33.00		
	Ch: 96.00 - 124.00 Bottom	1	28.00	0.40		11.20		
	sides	2	28.00	0.50		28.00		
	Ch: 131.00 - 159.00 Bottom	1	28.00	0.40		11.20		
	sides	2	28.00	0.50		28.00		
	Ch: 166.00 - 195.00 Bottom	1	29.00	0.40		11.60		
	sides	2	29.00	0.50		29.00		
	Ch: 201.00 - 231.00 Bottom	1	30.00	0.40		12.00		
	sides	2	30.00	0.50		30.00		
	Ch: 240.00 - 251.00 Bottom	1	11.00	0.40		4.40		
	sides	2	11.00	0.50		11.00		
				Total Qty Sqm		967.40	85.00	82229.00
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)							
	For BS Slab Drain / Missing	Sqm						
	At L&T Colony main road LHS Ch:0.00 - 30.00 Bottom	1	19.00	0.40		7.60		
	sides	2	19.00	0.50		19.00		
	At main road both sides Bottom	1	11.00	0.40		4.40		
	sides	2	11.00	0.45		9.90		
	At main road both sides Bottom	1	11.00	0.40		4.40		
	sides	2	11.00	0.45		9.90		
	At main road near 4th cross Bottom	1	9.50	0.40		3.80		

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Assistant 11/1

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	sides	2	9.50	0.45		8.55		
				Total Qty Sqm		67.55	699.00	47217.45
7	KSRRB M300-52.2. Scarifying Existing Bituminous surface to a depth of 50mm by Mechanical Means. Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material and complete as per specifications. MORTH Specification No. 305.4.3 (P.No.148, I.No.19.59 of PW,P&IWTD S.R 2016-17)							
	Measurements recorded on:							
18	**Scarifying Existing Granular Surface, Road Portion**							
	L&T Colony Main Road Damaged road portion only	Sqm						
	0-30	1	30.00	(5.7+5.9)/2		174.00		
	30-60	1	30.00	(5.9+6.2)/2		181.50		
	90-120	1	30.00	(6.1+6.3)/2		186.00		
	180-210	1	30.00	(5.7+5.9)/2		174.00		
	210-240	1	30.00	(5.9+6.5)/2		186.00		
	Varadaraju Layout 8th cross Road RHS							
		1	30.00	(5+6)/2		165.00		
		1	30.00	(6+5)/2		165.00		
		1	7.00	(5+6.5)/2		40.25		
				TOTAL QTY Sqm		1271.75	8.00	10174.00
8 17	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)							
	Measurements recorded on:							
	Cross road to Amruthahalli main road	1	30.00	(5.7+5.8)/2	0.30	49.50		
	6th cross road cut portion	4	2.20	1.70	0.30	4.49		
	4th cross road cut portion	6	5.50	1.80	0.30	17.82		
				TOTAL QTY Cum		71.81	156.00	11202.048
9 90	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)							
	Measurements recorded on:							
	Wet Mix Macadam	Cum						
	L&T Colony Main Road Bad reaches							
	0-30	1	30.00	(5.7+5.9)/2	0.25	43.50		
	30-60	1	30.00	(5.9+6.2)/2	0.25	45.38		
	90-120	1	30.00	(6.1+6.3)/2	0.25	46.50		
	180-210	1	30.00	(5.7+5.9)/2	0.25	43.50		
	210-240	1	30.00	(5.9+6.5)/2	0.25	46.50		

Assistant Executive Engineer
Kodigehalli Sub Division

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	Varadaraju Layout 8th cross Road RHS							
		1	30.00	(5+6)/2	0.25	41.25		
		1	30.00	(6+5)/2	0.25	41.25		
		1	7.00	(5+6.5)/2	0.25	10.06		
	Cross road to Amruthahalli main road	1	30.00	(5.7+5.8)/2	0.25	43.13		
	6th cross road cut portion	4	2.20	1.70	0.25	3.74		
	4th cross road cut portion	6	5.50	1.80	0.25	14.85		
				Total Qty Cum		**379.65**	**1855.00**	**704255.39**
10	KSRRB M500-6. Providing and applying **primer coat with S.S. bitumen emulsion on prepared surface of granular base** such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kg /sqm using mechanical means complete as per specifications.As per MORTH Specification No. 502 with all lead and lift loading and unloading and all other incidential charges etc.complete as per specification and direction of the engineer-in-charge of the work							
	Measurements recorded on:							
	Prime Coat	Sqm						
	L&T Colony Main Road							
	0-30	1	30.00	(5.7+5.9)/2		174.00		
	30-60	1	30.00	(5.9+6.2)/2		181.50		
	90-120	1	30.00	(6.1+6.3)/2		186.00		
	180-210	1	30.00	(5.7+5.9)/2		174.00		
	210-240	1	30.00	(5.9+6.5)/2		186.00		
	Varadaraju Layout 8th cross Road RHS							
		1	30.00	(5+6)/2		165.00		
		1	30.00	(6+5)/2		165.00		
		1	7.00	(5+6.5)/2		40.25		
	Cross road to Amruthahalli main road	1	30.00	(5.7+5.8)/2		172.50		
	6th cross road cut portion	4	2.20	1.70		14.96		
	4th cross road cut portion	6	5.50	1.80		59.40		
				Total Qty Sqm		**1518.61**	**31.00**	**47076.91**
11	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)							
	Measurements recorded on:							
	L&T Colony 1st Cross Road	Sqm						
	0-32	1	32.00	(6+5.1)/2		177.60		
	2nd Cross Road							
	0-31	1	31.00	(5.8+5.6)/2		176.70		
	3rd Cross Road							
	0-30	1	30.00	(4.5+5.4)/2		148.50		
	4th Cross Road							
	0-32	1	32.00	(5.3+5.3)/2		169.60		
	5th Cross Road							
	0-32	1	32.00	(5.8+4.7)/2		168.00		
	6th Cross Road							

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Assistant Executive Engineer
Kodigehalli Sub Division

B.V.H. Consultants Bangalore

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	0-31	1	31.00	(5.6+4.9)/2		162.75		
	L&T Colony Main Road							
	60-90	1	30.00	(6.2+6.1)/2		184.50		
	120-125	1	5.00	(6.1+6.3)/2		31.00		
	240-251	1	11.00	(6.5+7.4)/2		76.45		
				Total Qty Sqm		**1295.10**	**3.00**	**3885.30**
12	KSRRB 500-7. Providing and applying **tack coat using 80/100 grade bitumen**(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH Chapter 5 with all lead and lift loading and unloading and all other incidential charges etc.complete as per specification and direction of the engineer-in-charge of the work							
	Measurement recorded on:							
	For DBM	Sqm						
	L&T Colony Main Road							
	0-30	1	30.00	(5.7+5.9)/2		174.00		
	30-60	1	30.00	(5.9+6.2)/2		181.50		
	60-90	1	30.00	(6.2+6.1)/2		184.50		
	90-120	1	30.00	(6.1+6.3)/2		186.00		
	120-150	1	30.00	(6.3+6.1)/2		186.00		
	150-180	1	30.00	(6.1+5.7)/2		177.00		
	180-210	1	30.00	(5.7+5.9)/2		174.00		
	210-240	1	30.00	(5.9+6.5)/2		186.00		
	240-253	1	13.00	(6.5+7.4)/2		90.35		
	For BC							
	L&T Colony 1st Cross Road							
	0-32	1	32.00	(6+5.1)/2		177.60		
	2nd Cross Road							
	0-31	1	31.00	(5.8+5.6)/2		176.70		
	3rd Cross Road							
	0-30	1	30.00	(4.5+5.4)/2		148.50		
	4th Cross Road							
	0-32	1	32.00	(5.3+5.3)/2		169.60		
	5th Cross Road							
	0-32	1	32.00	(5.8+4.7)/2		168.00		
	6th Cross Road							
	0-31	1	31.00	(5.6+4.9)/2		162.75		
	L&T Colony Main Road							
	0-30	1	30.00	(5.7+5.9)/2		174.00		
	30-60	1	30.00	(5.9+6.2)/2		181.50		
	60-90	1	30.00	(6.2+6.1)/2		184.50		
	90-120	1	30.00	(6.1+6.3)/2		186.00		

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Assistant Engineer.

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	120-150	1	30.00	(6.3+6.1)/2		186.00		
	150-180	1	30.00	(6.1+5.7)/2		177.00		
	180-210	1	30.00	(5.7+5.9)/2		174.00		
	210-240	1	30.00	(5.9+6.5)/2		186.00		
	240-253	1	13.00	(6.5+7.4)/2		90.35		
	Varadaraju Layout 8th cross Road RHS							
		1	30.00	(5+6)/2		165.00		
		1	30.00	(6+5)/2		165.00		
		1	7.00	(5+6.5)/2		40.25		
	Cross road to Amruthahalli main road	1	30.00	(5.7+5.8)/2		172.50		
				Total Qty Sqm		**4624.60**	**13.00**	**60119.8**
(13)	KSRRB M500-16. Providing and laying dense bituminous macadam 50-75mm compacted thickness with 4.5% VG-30 Bitumen using 40/60 TPH capacity H.M.P, using crushed aggregates of grading II, premixed with VG 30 grade bituminous binder and transporting the hot mix to work site, laying with mechanical paver to the required grade level and alignment rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10, complete in all respects complete as per specification MORTH specification No. 507 (P.No.162 I.No. 21.17.6 of PW,P&IWTD S.R 2016-17)							
	For Laying DBM	Cum						
	L&T Colony Main Road							
	0-30	1	30.00	(5.7+5.9)/2	0.05	8.70		
	30-60	1	30.00	(5.9+6.2)/2	0.05	9.08		
	60-90	1	30.00	(6.2+6.1)/2	0.05	9.23		
	90-120	1	30.00	(6.1+6.3)/2	0.05	9.30		
	120-150	1	30.00	(6.3+6.1)/2	0.05	9.30		
	150-180	1	30.00	(6.1+5.7)/2	0.05	8.85		
	180-210	1	30.00	(5.7+5.9)/2	0.05	8.70		
	210-240	1	30.00	(5.9+6.5)/2	0.05	9.30		
	240-253	1	13.00	(6.5+7.4)/2	0.05	4.52		
				Total Qty Cum		**76.97**	**7384.00**	**568328.02**
(14)	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)							
	Measurement recorded on:							
	Bituminous Concrete	Cum						
	1st Cross Road							
	0-32	1	32.00	(6+5.1)/2	0.04	7.10		
	2nd Cross Road							
	0-31	1	31.00	(5.8+5.6)/2	0.04	6.88		
	3rd Cross Road							
	0-30	1	30.00	(4.5+5.4)/2	0.04	6.66		

Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	4th Cross Road							
	0-32	1	32.00	(5.3+5.3)/2	0.04	7.10		
	5th Cross Road							
	0-32	1	32.00	(5.8+4.7)/2	0.04	7.10		
	6th Cross Road							
	0-31	1	31.00	(5.6+4.9)/2	0.04	6.88		
	L&T Colony Main Road							
	0-30	1	30.00	(5.7+5.9)/2	0.04	6.66		
	30-60	1	30.00	(5.9+6.2)/2	0.04	6.66		
	60-90	1	30.00	(6.2+6.1)/2	0.04	6.66		
	90-120	1	30.00	(6.1+6.3)/2	0.04	6.66		
	120-150	1	30.00	(6.3+6.1)/2	0.04	6.66		
	150-180	1	30.00	(6.1+5.7)/2	0.04	6.66		
	180-210	1	30.00	(5.7+5.9)/2	0.04	6.66		
	210-240	1	30.00	(5.9+6.5)/2	0.04	6.66		
	240-253	1	13.00	(6.5+7.4)/2	0.04	2.89		
	Varadaraju Layout 8th cross Road RHS							
		1	30.00	(5+6)/2	0.04	6.60		
		1	30.00	(6+5)/2	0.04	6.60		
		1	7.00	(5+6.5)/2	0.04	1.61		
	Cross road to Amruthahalli main road	1	30.00	(5.7+5.8)/2	0.04	6.90		
				Total Qty Cum		119.61	8438.00	1009286.06
15 30	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)							
	Measurement recorded on:							
	Edge line	Sqm						
	1st Cross Road							
	0-32	2	32.00	0.10		6.40		
	2nd Cross Road							
	0-31	2	31.00	0.10		6.20		
	3rd Cross Road							
	0-30	2	30.00	0.10		6.00		
	4th Cross Road							
	0-32	2	32.00	0.10		6.40		
	5th Cross Road							
	0-32	2	32.00	0.10		6.40		
	6th Cross Road							
	0-31	2	31.00	0.10		6.20		
	L&T Colony Main Road							

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Sl No	Description of Work	No.	L	B	D	Qty	Rate	Amount
	0-30	2	30.00	0.10		6.00		
	30-60	2	30.00	0.10		6.00		
	60-90	2	30.00	0.10		6.00		
	90-120	2	30.00	0.10		6.00		
	120-150	2	30.00	0.10		6.00		
	150-180	2	30.00	0.10		6.00		
	180-210	2	30.00	0.10		6.00		
	210-240	2	30.00	0.10		6.00		
	240-253	2	13.00	0.10		2.60		
	Varadaraju Layout 8th cross Road RHS							
		2	30.00	0.10		6.00		
		2	30.00	0.10		6.00		
		2	7.00	0.10		1.40		
	Cross road to Amruthahalli main road	2	30.00	0.10		6.00		
	Center line	89	3.00	0.10		26.70		
				Total Qty Sqm		134.30	570.00	76551.00
				Total Construction Cost				2711666.85

AE(W7)
29/01/18

Assistant Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

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Improvements to roads and drains at LNT colony near Amrutha clinic in ward no:07, byatarayanapura.

B.V.H. Consulting Engineers Bangalore

AE(W7)

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092